

Henri Gachot. *Le Télégraphe Optique de Claude Chappe*. Preface by Georges Rigol. 196 pp., 42 illus., bibl., index. Saverne: Imprimerie et Édition Savernoises, 1967. 33 F; \$8.00.

The story of Claude Chappe and his system of semaphore telegraphs which spanned France from corner to corner throughout the first half of the nineteenth century is a fascinating one from many points of view. It is a story which has been told before but never, at least to my knowledge, with such a wealth of contemporary history and documentation as Dr. Henri Gachot has assembled and so appropriately selected.

A telegraph, whether it be some optical system, an electrical instrument, or even a modern telex machine, may well be of great interest to the specialist; but in the wider context it is surely the message which the telegraph conveys which constitutes the really important factor for most people. It was doubtless the

recognition of this fact which prompted Gachot to include the original texts of so many historic dispatches in his essay, and in doing so he has presented us with a first-class account of the development of the Chappe system of optical telegraphs in its setting of contemporary history.

Gachot tells us little of the technicalities of the Chappe telegraphs for, in truth, there is little to tell. The mechanism by which the arms of the semaphore were operated was simple, and such variations as may have existed were insignificant. The telegraph stations were erected at intervals of three to eight miles, according to the nature of the terrain, upon the tops of hills, churches, châteaux, or town halls. By 1844 there were no fewer than 534 throughout the length and breadth of France organized in a network of nearly thirty "lines," most of which radiated from Paris. The absence of a map of France to show the routes of the optical telegraph system is to be regretted.

From the archives of the city of Strasbourg (where he lives) and from those of the Musée Postal de Paris, Gachot has unearthed a wealth of historic dispatches, many of which he quotes verbatim. Collectively these paint a picture of Napoleonic times, of the First Empire, and of the Restoration period—a picture which would be difficult to achieve so briefly in any other way. The whole period from 1789 onward for more than half a century was one of turmoil and political upheaval, of revolution and military adventures, of uncertainty and instability. Beneath all this tumult and change, it is perhaps a little surprising that the Chappe telegraph system which was inaugurated in 1793 should not only have survived without interruption but should have been extended to the farthest corners of the country.

Visual methods of signaling had been used from the earliest times, almost invariably for military purposes. The French optical telegraph system was no exception in that it was used almost exclusively for the transmission of "high level" official messages and military dis-

patches. At one time Napoleon himself insisted on "vetting" the text of every message and when he discovered that his orders were being disobeyed, he addressed a sharp reprimand to his Minister of State:

J'avais ordonné que toute dépêche télégraphique, avant d'être transmise, vous fût envoyée pour m'être communiquée; vous n'en avez rien fait, and vous avez fait partir la dépêche ci-jointe sans me la soumettre. Faites moi connaître d'où vient cette négligence et cette contravention à mes ordres; mon service en a beaucoup souffert. Il faut que vous ayez pour principe de ne jamais considérer mes ordres comme tombés en désuétude et de ne jamais passer les bornes du pouvoir que je vous ai accordé.

The survival of the Chappe telegraphs for so long is certainly a tribute to the loyalty of the lonely "Stationnaires" who manned the telegraph towers, often in very remote locations, and who kept watch from dawn to dusk through their telescopes for signals from neighboring towers. By mid-century, however, it was evident that even the loyalty of the Stationnaires could not prevail against the coming of the electric telegraph.

At the start of the French Revolution, the properties of electricity were virtually unknown—the voltaic pile, the galvanic cell and Oersted's electromagnetism discoveries were of the future. It was thus inevitable that any advance in the art of signaling should depend upon a developing of the visual methods which had served in earlier times. Claude Chappe unquestionably deserved the title of Ingénieur Télégraphe conveyed upon him by the Convention Nationale in the autumn of 1793. It is one thing to be an inventor, even of a comparatively unsophisticated mechanism such as his semaphore telegraph; it is quite another matter to possess the vision, the force of character, and the administrative ability to direct the setting up of long chains of optical telegraphs throughout a country such as France in the throes of a civil war.

But toward mid-century the writing was on the wall: the work of Soemmering and of Gauss and Weber, of Cooke

and Wheatstone, Morse and Vail had sounded the death knell of the optical telegraph. But in France one last despairing gesture remained to those for whom the curious signaling arms of the Chappe telegraphs had become almost a way of life. Believing that the transition from the optical to an electrical system would be rendered more acceptable if the same code could be used, the then-Director of Telegraph Lines commissioned Louis Breguet to design an electric telegraph in which the signals would be indicated by the movements of two small arms in a manner similar to those of the optical telegraph. Although it was used for a few years, the instrument was too complicated, and its signals were not quite identical with those of the optical system. With a change in the directorship of telegraph lines, the Breguet instruments were replaced by Morse equipment.

At last, in 1855, the lines of the optical telegraph were finally closed down after sixty years of valuable service. What now remains? "Que reste-t-il de toutes ces belles installations? Quelques lunettes au Musée Postal de Paris et deux indicateurs au Conservatoire des Arts et Metiers dans la section non ouverte au public. . . ."

Even in the National Science Museum of France, the remains of the Chappe "Telegraphe Optique" are not on view. What a pity—though this at least can be rectified!

Gachot's book is a valuable contribution to the history of the optical telegraph and at the same time a charming essay on the history of those troubled times which commenced with the outbreak of the French Revolution.

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